

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
October 17, 2006
HISTORY RECORD

FAA Control # 06-02-265

Subject: Retention or Development of Lowest Possible RNAV LNAV and/or VNAV Minimums.

Background/Discussion: As the NFPO implements the LPV program, a conflict in LPV and LNAV/VNAV criteria has resulted in substantial increase in LNAV and/or VNAV minimums. This is the result of either lowering an existing LNAV IAP's final segment slope to accommodate LPV glide-slope requirements (the shallower angle causing the loss of a significant LNAV step-down fix) or the very restrictive LPV missed approach criteria causes an LNAV missed approach penetration at a mountainous location that formerly did not exist using LNAV missed approach criteria. An example of this is at St. George, Utah, RNAV Runway 34 (attached, old and new IAPs). Note the 400' increase in LNAV minimums on the new procedure.

Another example is French Valley (attached, old and new IAPs). Note the 517' increase in LNAV minimums. Note also no LPV procedure was added. The procedure was redesigned to add LPV minimums, but obstacles in the missed approach area precluded the LPV procedure. However, the upwards adjustment of LNAV minimums was left in place, which serves greatly to the detriment of the users of this airport. Note also the new terminal routing in the new F70 procedure, none of which are "NoPT" even though fundamental TERPS concepts dictate NoPT on two, if not all three of these terminal routes. (NBAA has had policy discussions with AFS-420 about application of NoPT in such circumstances.)

If this trend continues those operators who do not have LPV capability are having their previous access to these airports compromised for no valid reason. This represents unfair exclusion of a particular group of users. (An increase of minimums of several hundred feet represents a form of exclusion.)

Recommendations: Where the addition of an LPV procedure to an existing RNAV procedure will cause more than a 60' increase in LNAV and/or VNAV minimums, then the existing procedure should stand-alone and a separate LPV procedure should be developed for the runway end. Where an RNAV procedure does not presently exist, the lowest possible LNAV or LNAV/VNAV minimums should be developed independent of LPV requirements. This may result in two separate procedures to the runway end in some cases.

Further, LPV missed approach criteria should be reviewed and modified so that it does not require straight-ahead flight in the missed approach any further than is required in ILS turning missed approach criteria.

Comments: This recommendation affects 8260.19C and various RNAV criteria orders.

Submitted by: Steve Bergner

Organization: NBAA

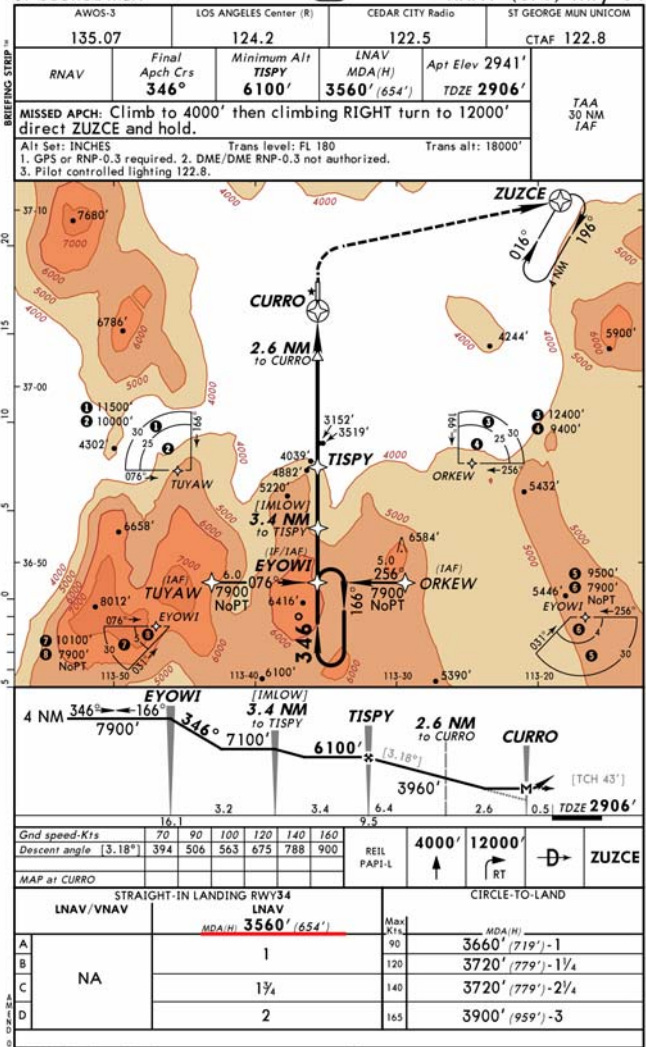
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Date: September 12, 2006

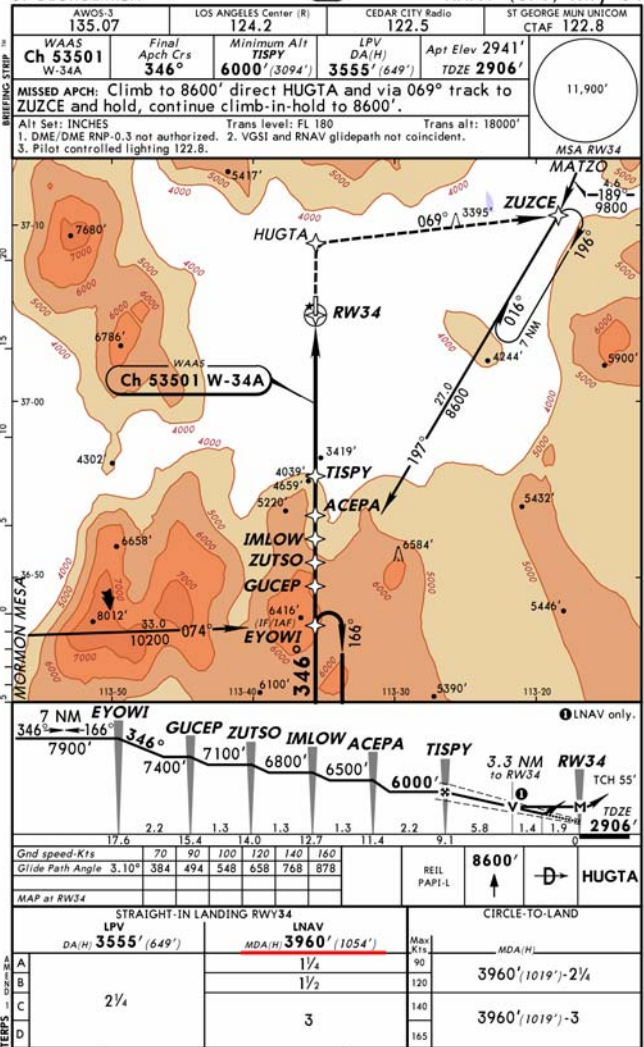
Old Procedure **KSGU/SGU ST GEORGE MUN** **JEPPesen** **ST GEORGE, UTAH** 27 SEP 02 (12-1) Eff 3 Oct RNAV (GPS) Rwy 34



CHANGES: Database identifier.

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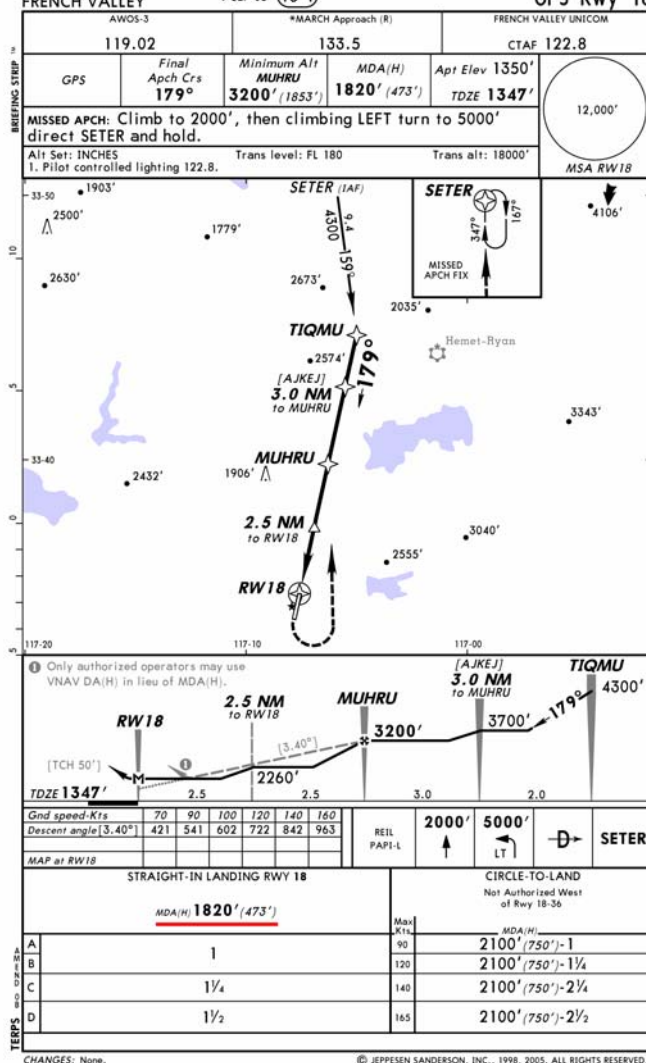
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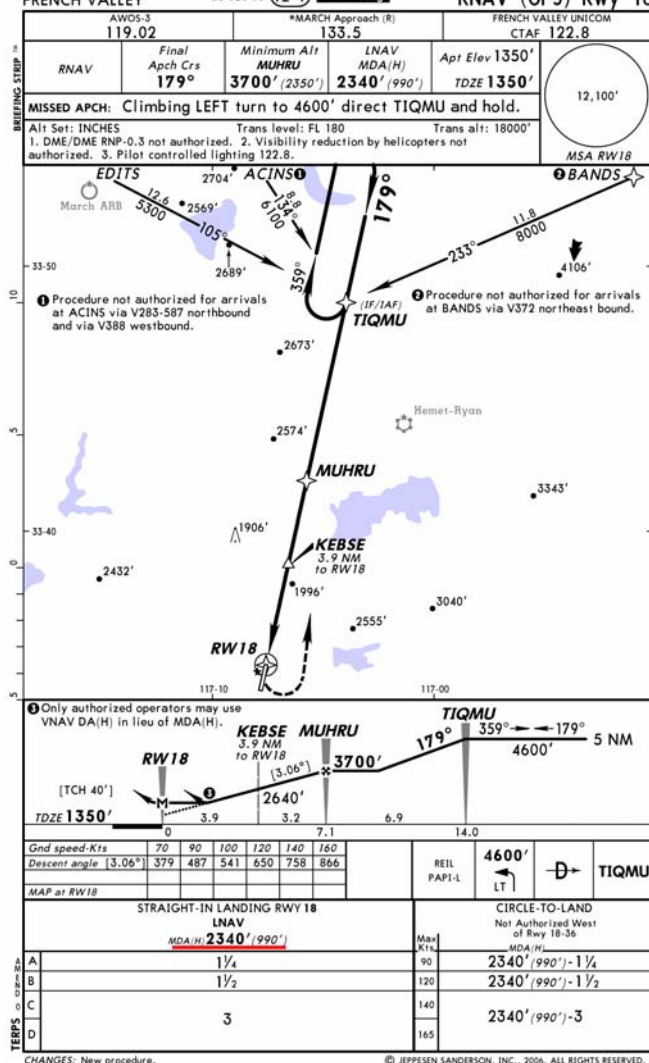
CHANGES: Procedure.

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Old Procedure **F70/RBK** **FRENCH VALLEY** **MURRIETA/TEMECULA, CALIF** **GPS Rwy 18**



New Procedure **F70/RBK** **FRENCH VALLEY** **MURRIETA/TEMECULA, CALIF** **RNAV (GPS) Rwy 18**



Initial Discussion Meeting 06-02: New issue introduced by Rich Boll, NBAA. It appears that as the NFBG implements the WAAS LPV program, a conflict in LPV and LNAV and/or LNAV/VNAV criteria sometimes results in a substantial increase in LNAV and/or VNAV minimums. If this trend continues those operators who do not have LPV capability are impacted by having LNAV minimums increased significantly. For example, at St George, UT (KSGU), LPV capability was added which decreased the previous LNAV MDA by 5 feet. However, the revised IAP eliminated the final segment LNAV step-down fix thereby increasing the MDA by 400 feet and the CAT C visibility minimums from 1 ¾ SM to 3 SM. Similarly, at Murrieta, CA (F70), LPV minimums were not added yet the LNAV MDA was increased by 520 feet. NBAA recommends where the addition of an LPV procedure to an existing RNAV procedure will cause more than a 60 foot increase in LNAV and/or LNAV/VNAV minimums, then the existing procedure should stand alone and a separate LPV procedure developed. Danny Hamilton, NFBG, responded that the NFBG combines procedures to the extent possible to avoid creating extra procedures. He added that some older RNAV procedures were designed with criteria that have since been modified and MDA increases may have been caused by new obstacle clearance considerations. Danny further stated that the NFBG reviews and responds to public input to proposed new procedures during the coordination phase; however, it is imperative that comments be received prior to flight inspection and publication as the procedure must be put back in work. He added that Order 8260.54 has not yet been implemented by the NFBG. When asked when they would implement the Order, Danny responded that it is currently being programmed. Tom Schneider, AFS-420, stated he generally agrees with the recommendation; however, procedure designers should be trained to take a hard look at the impact on current minimums when adding additional lines of minima or re-designing an approach. Danny responded that if a new policy is to be established, it must include specific guidance when to “split” LPV procedures from LNAV/VNAV procedures. Randy Kenagy, AOPA, asked whether LPV criteria affect LNAV and/or LNAV/VNAV. Randy also recommended that every effort be made to avoid splitting procedures and that final segment step-down fixes be retained when necessary to keep the lowest LNAV minima. Rich requested the reasons behind the increased MDAs at St George and Murrieta. Danny agreed to provide the information. **ACTION: AJW-321 and AFS-420.**

MEETING 07-01: Brad Rush, AJW-321, briefed that the RNAV approach at French Valley, CA (F70) is under amendment to lower the LNAV MDA. The RNAV approach at St. George, UT (SGU) requires the initial portion of the missed approach be straight to accommodate LPV and Air Traffic wants the same track for the LNAV approach. Brad further stated that the NFPO has approximately 6-8 airports where 2 RNAV approaches were published to retain the lowest minimums for both LNAV and LNAV/VNAV and LPV. NFPO personnel are trained to develop separate approaches when necessary to preclude high LNAV minimums. Wally Roberts, NBAA, asked how a user can find out about air traffic decisions for restrictions on approaches. Brad recommended contacting the applicable ATO Service Area FPO. Bill Hammett, AFS-420 (ISI) briefed that current policy requires that the minimum step-down altitude be at or below the descent path on procedures that provide both vertically guided (LNAV/VNAV and/or LPV) and non-vertically guided (LNAV and/or LP) minimums. Jack Corman, the AFS-420 RNAV criteria writer, is studying this requirement and the feasibility deleting the requirement for the non-vertically guided procedure to provide a stabilized descent from the (P)FAF to TCH. If this were the case, F70 LNAV minimums would still be the lower value even if the LPV were published. Brad advised that if new policy is under consideration, it should include exact criteria when a separate procedure is required. **ACTION: AJW-321 and AFS-420.**

MEETING 07-02: Brad Rush, AJW-321, briefed that the amendment for the RNAV approach at French Valley, CA (F70) will be effective on October 25th. Brad also briefed that the NFPO has established internal operating procedures that should clarify the intended objective and assist procedure developers in repeating situations like those described in the original NBAA recommendation. Additionally, this issue has been made a “special interest” item for QC. Tom Schneider, AFS-420, stated that the NFPO internal guidance makes an Order 8260.19 policy change unnecessary and recommended the issue be closed. The group agreed. [Item Closed](#).
